Statewide Peanut Program Update

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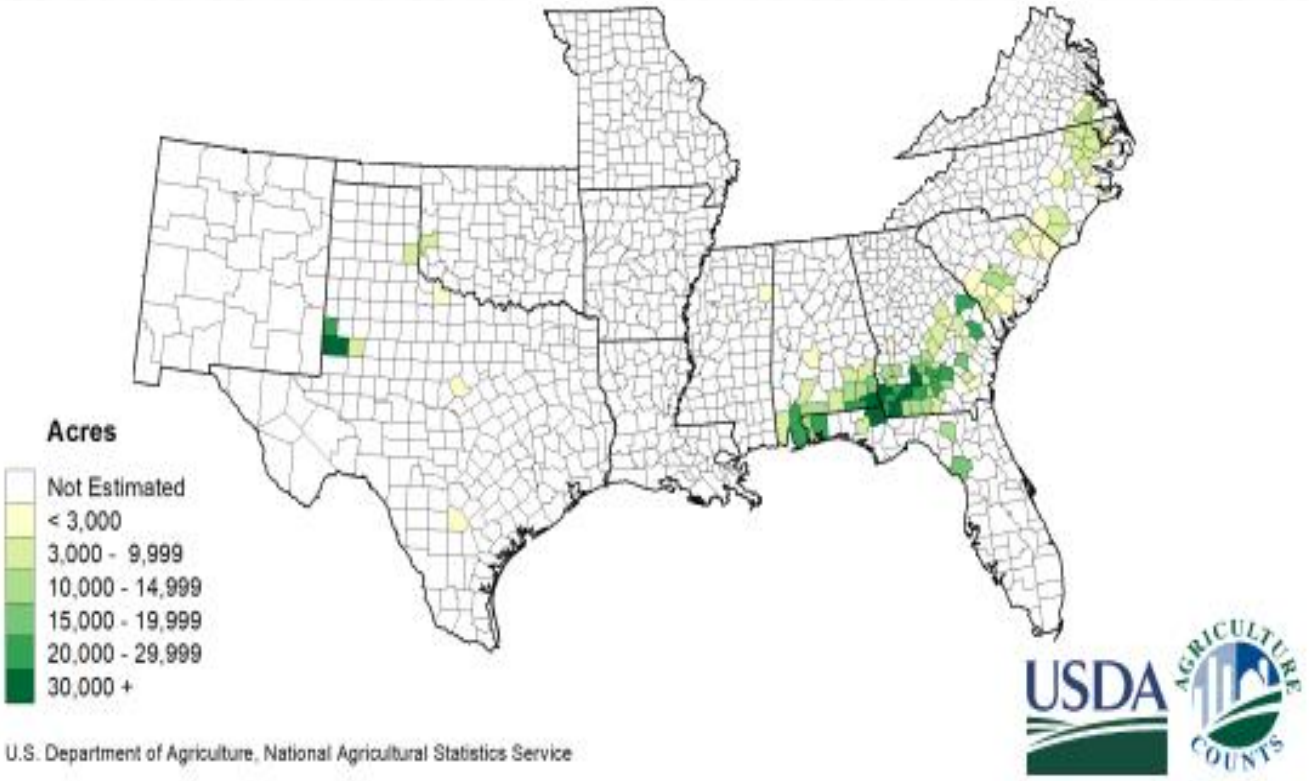
Vernon, TX

US Peanuts

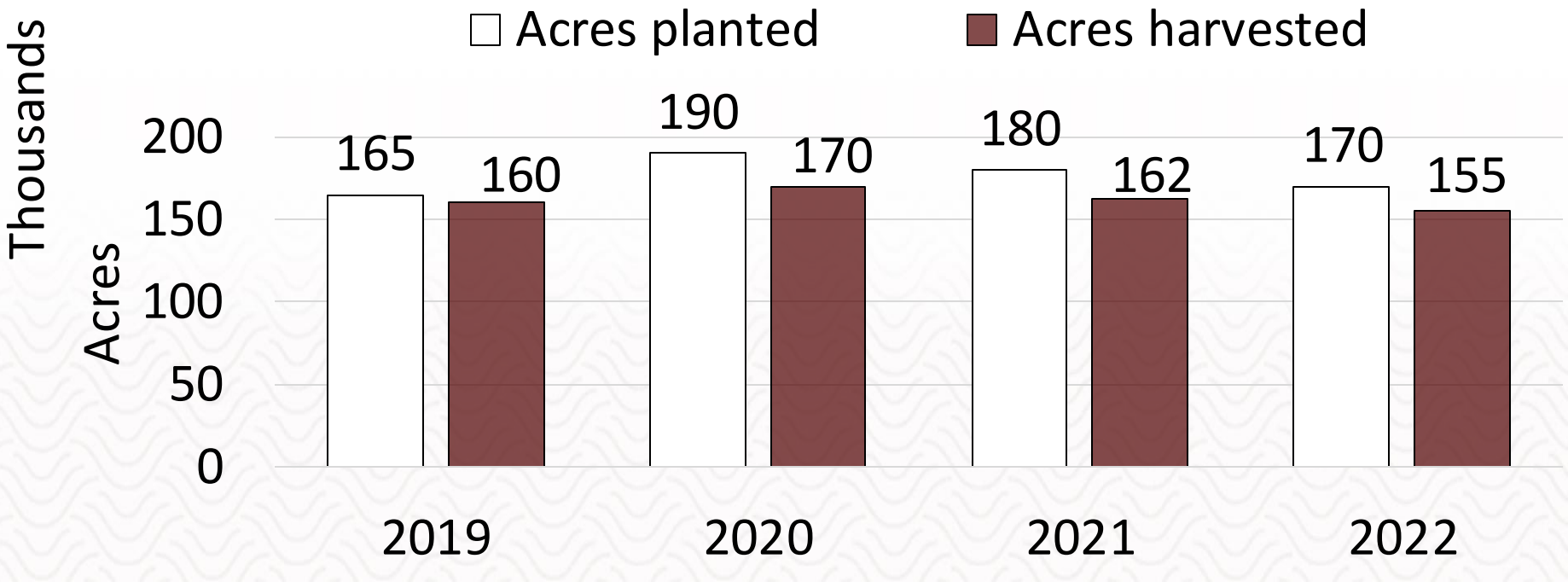


$ Production

1. GA
2. TX
3. AL/FL
4. NC
5. SC
6. VA
7. MI
8. NM
9. OK

Texas peanuts

- Texas produces 11-12% of US peanut
- Average 92% of planted acres in TX are harvested
- Texas produces all four market types
- Texas produces the highest production of organic peanuts



2022 peanut acres

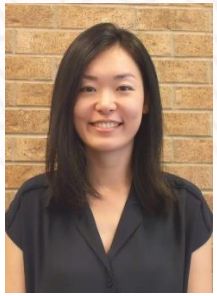
- USDA FSA
  - Certified planted acres report – 134,145 ac
  - Failed acres – 19,784 ac

Planted and failed peanut acres in Texas as of August 22, 2022		
Southwest	**Planted Acres**	**Failed Acres**
Spanish	35,294	15,640
Runner	35,393	2717
Virginia	36,398	1187
Valencia	27,060	240
SW Total	134,145	19,784

Source: JLA report. USDA-FSA Certified Acreage Report, August 22, 2022

Texas Peanut Program

Paul DeLaune
Soil Health
(Vernon)



Emi Kimura
Agronomy
(Vernon)

Pancho Abello
Ag Economics
(Vernon)

Vacant

Pathology
(Lubbock)

Pete Dotray
Weed Science
(Lubbock)

Katie Lewis
Soil Fertility
(Lubbock)

Bob Whitney
Organic specialist
(Stephenville)

James Grichar
Weed Science
(Yoakum)

Joshua McGinty
Weed Science
(Corpus Christi)

Texas Peanut Producers

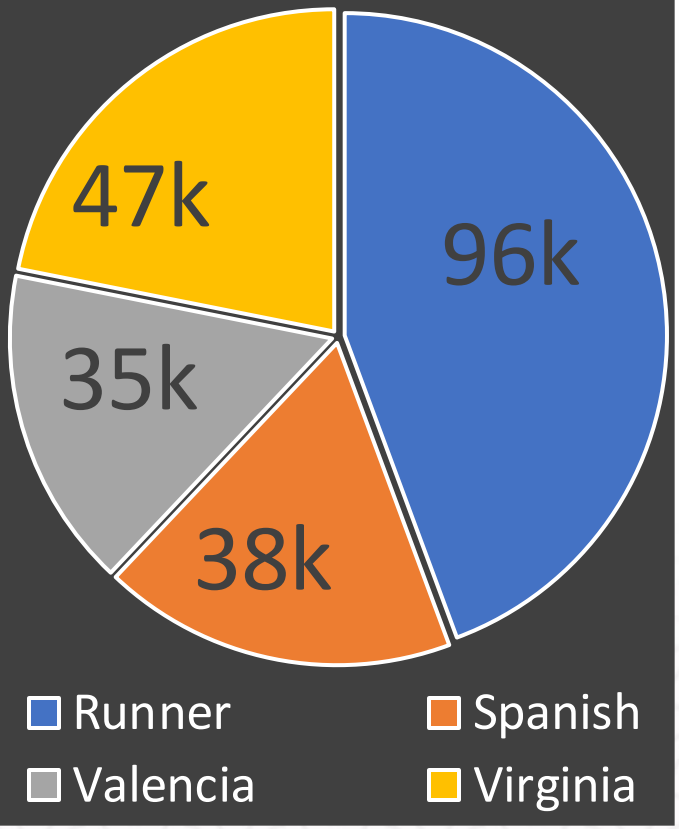
Texas A&M AgriLife Research | Extension

Objectives

1. Variety performance
2. Weed Control
3. Disease Control
4. Soil fertility management
5. Soil health management
6. Market outlook

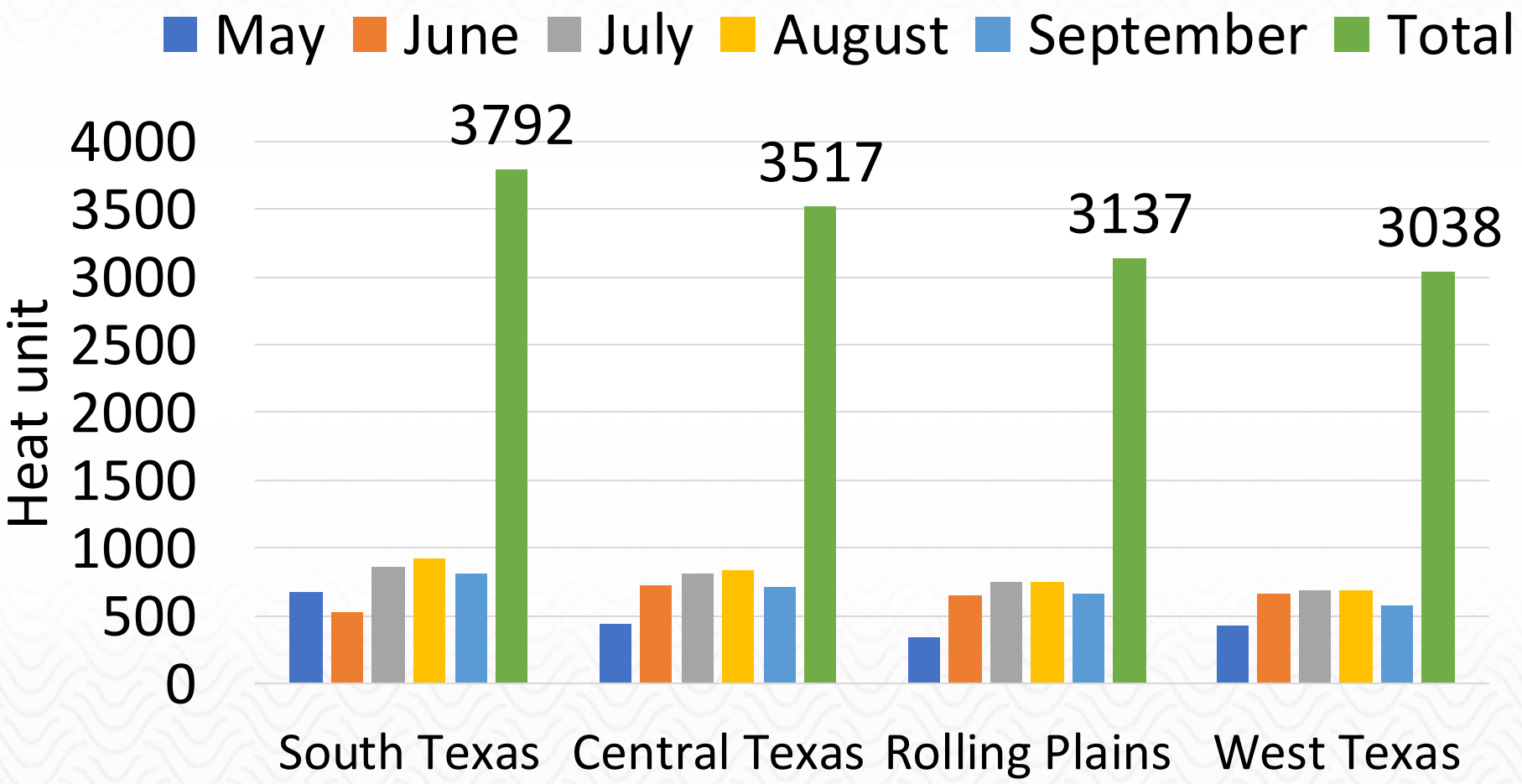
Obj. 1 Variety performance

Emi Kimura, Katie Lewis, and Johnny Cason

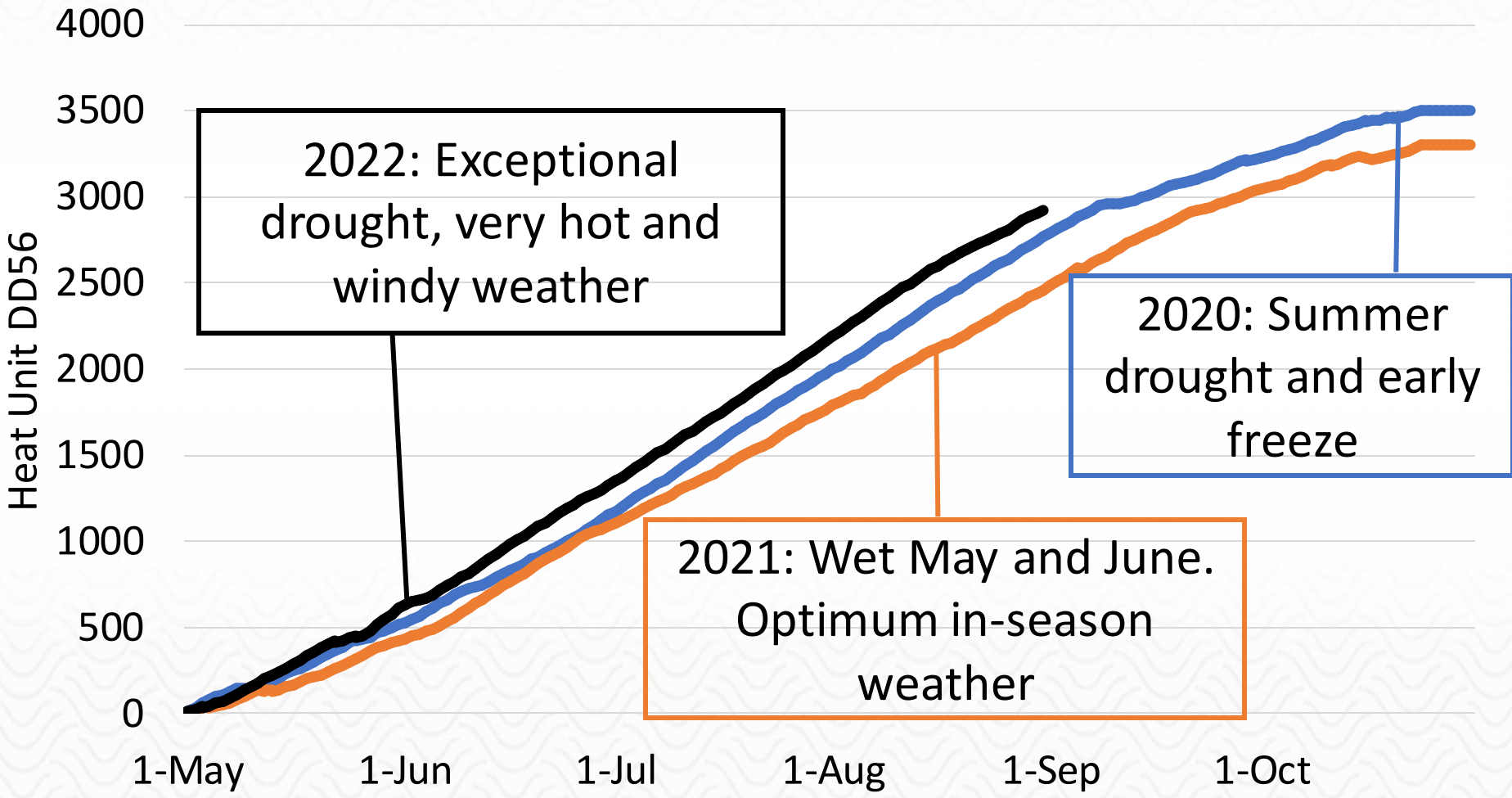


Acres were estimated based on survey results obtained by TPPB

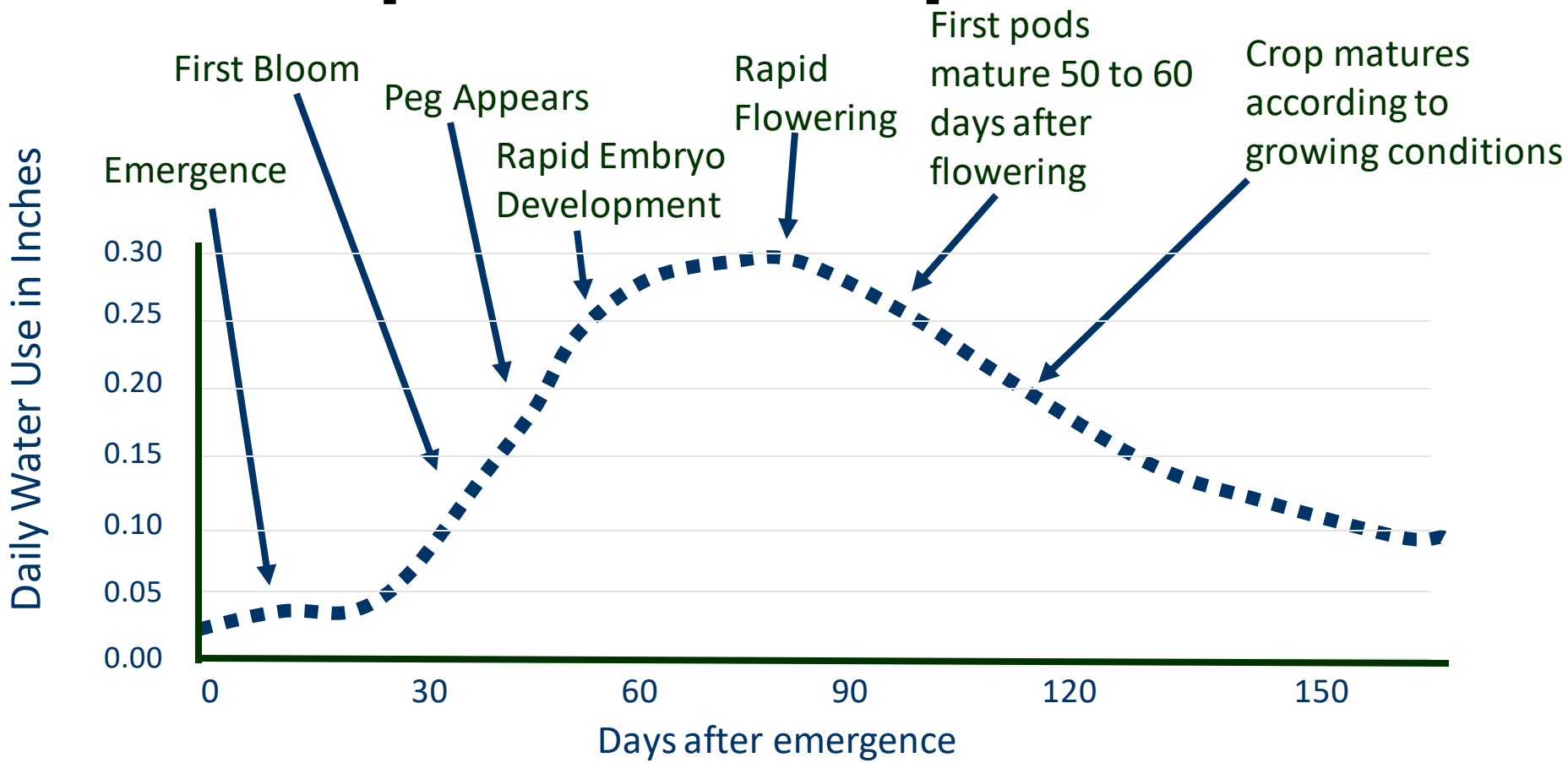
2021 Heat unit

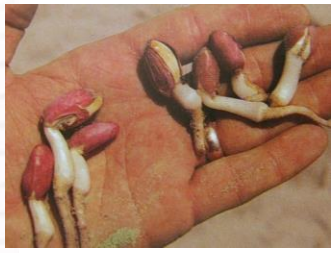


Heat unit accumulation in Seminole, TX



Water requirement of peanut

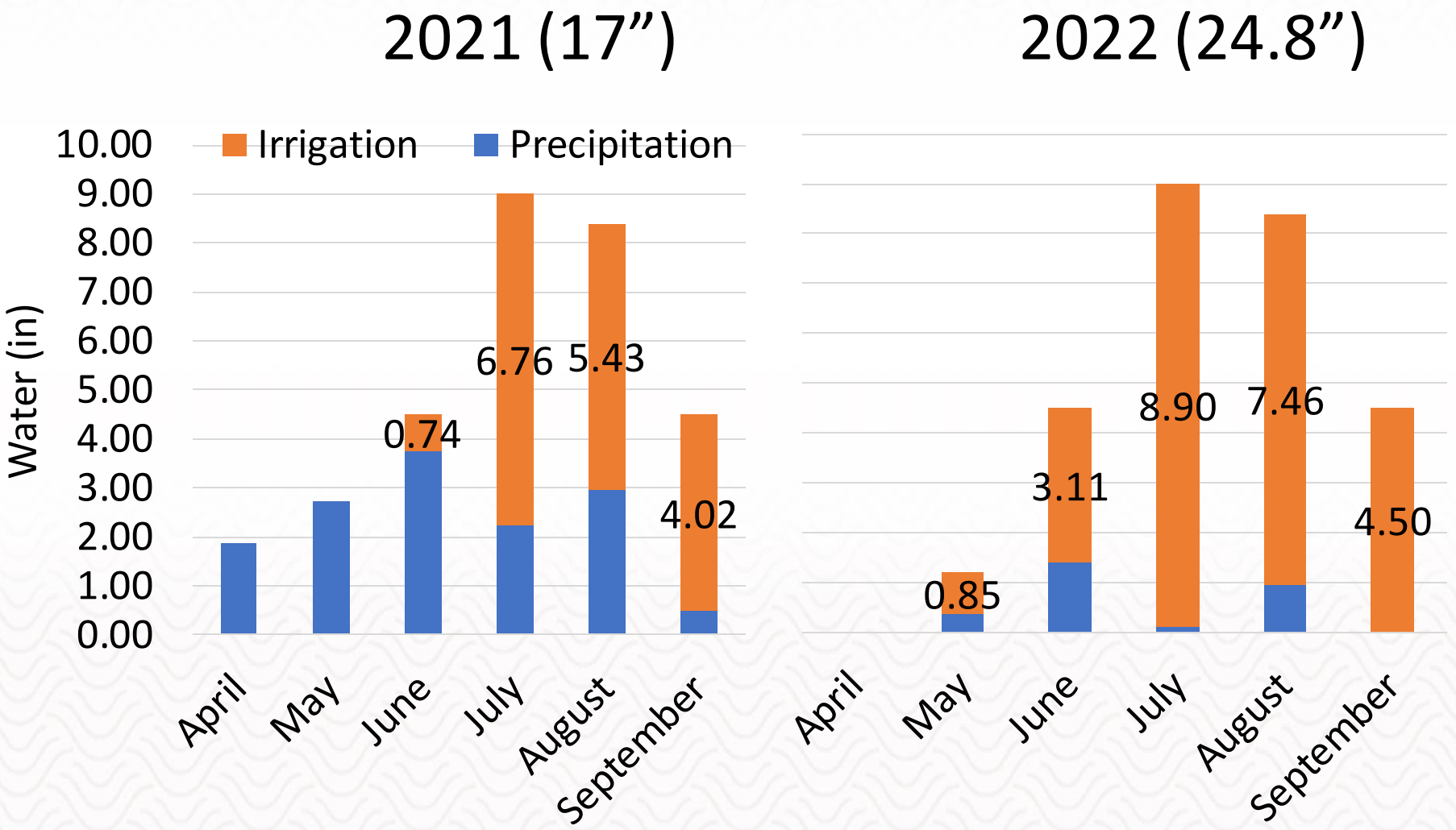







After: Texas Peanut Production Guide: http://soil-testing.tamu.edu/TRMEP/trmscs50.pdf. Slide credit: Dr. Dana Porter

2021 vs 2022 at Seminol, TX



2021 peanut variety trial summary

	West Texas	Rolling Plains 1	Rolling Plains 2	Central Texas	South Texas
County	Lubbock	Haskell	Collingsworth	Erath	Frio
Plot length	25'	25'	25'	10'	25'
Planting	5/4/2021	5/6/2021	5/13/2021	6/21/2021	6/7/2021
Digging	10/13/2021	9/28/2021	10/11/2021	11/10/2021	11/8/2021
Harvesting	10/19/2021	10/5/2021	10/21/2021	11/18/2021	11/15/2021
DAP	162	145	161	142	154
DD56	3178	3225	3245	3035	4092
Freeze	11/18/2021	11/19/2021	11/19/2021	12/7/2021	N/A
Precipitation Apr-Sep	14.04	19.13	17.57	21.33	22.61
Average yield					
Runner	2509	4743	4132	3920	5040
Spanish	3422	5351	3154	3709	3176
Virginia	2674	5053	3312	4800	4153
Valencia	2725	4119	2104	-	3565

RUNNER	Release	2021 Yield	2-yr Yield	3-yr Yield
ACI 789	AgRes	5610	6119	-
IPG 914	IPG	4739	4056	5027
IPG QR-14	IPG	4696	3506	4448
Lariat	OK	4356	4064	-
IPG 4944	IPG	4155	3933	4986
GA 09B	GA	4147	3694	4846
ARSOK R92-13	OK/NC	3807	-	-
ACI 080	ACI	3650	5100	-
TxL080256-02	TAMU	3493	4734	-
ACI 476	ACI	2953	5016	-
AG18	TAMU	2901	2932	4241
NemaTAM II	TAMU	2614	3167	4444
Tx144370	TAMU	2404	-	-
TxLRu0303	TAMU	2404	2905	-
TxL080243-06	TAMU	2352	4084	-
GA16HO	GA	1864	2487	-
Means		3509	3986	4665

West Texas Runner market type

AG18 and NemaTAMII

AG-18

A high-yielding

High grading

High-oleic runner-type peanut

Good resistance to Sclerotinia blight (*Sclerotinia minor* (Jagger))

It exhibits yield and grade attributes equal to or better than Georgia 06G and Georgia 09B

NemaTAMII

A high-yielding

High oleic fatty acid

Runner-type peanut cultivar

Resistance to root-knot nematodes

Yield equal to or better than Webb

Has higher grade potential than Webb Shorter canopy than Webb

State-wide Runner type results

Yellow: Top 2

	WTX		TRP1		TRP2		CTX		STX	
RUNNER	2021	2-yr	2021	2-yr	2021	2-yr	2021	2-yr	2021	2-yr
ACI 080	3650	5100	4260	3707	3402	3995	-	-	-	-
ACI 476	2953	5016	4421	3764	3459	3889	-	-	-	-
ACI 789	5610	6119	4105	3283	4330	4351	-	-	-	-
AG18	2901	2932	5833	5162	4818	5191	4615	6230	5767	5621
ARSOK R92-13	3807	-	4901	-	4439	4439	-	-	4635	-
GA 09B	4147	3694	4975	4840	3642	4600	2982	5184	5156	5436
GA16HO	1864	2487	4069	4404	4051	5046	3207	5877	4761	4474
IPG 4944	4155	3933	4765	4060	3807	4924	-	-	4802	4924
IPG 914	4739	4056	5475	4802	4500	4644	-	-	4740	4786
IPG QR-14	4696	3506	5014	4417	4217	4139	3511	5464	4619	4444
Lariat	4356	4064	5397	4870	4635	5343	4725	6602	5098	4839
NemaTAM II	2614	3167	5114	4907	4173	4423	3897	-	-	-
Tx144370	2404	-	3777	-	3803	3803	4505	-	4552	-
Tamrun OL19 (TxL080243-06)	2352	4084	4626	-	4408	3830	-	-	4572	4147
Tamrun OL18L (TxL080256-02)	3493	4734	5336	-	4317	4291	-	-	5473	4311
TxLRu0303	2404	2905	3825	4561	4112	4112	-	-	6307	5211
Average	3509	3986	4743	4398	4132	4439	3920	5871	5040	4819

Lubbock SPANISH	Release	2021 Yield	2-Yr Avg Yield	3-Yr-Avg Yield
SPan17	TAMU	4365	5166	-
IPG 3628	IPG	3946	3568	4532
OLe	OK	3389	2810	3562
AT 9899		3014	-	-
ACI 236	IPG	2396	2374	3115
Means		3422	3480	3736

West Texas Spanish market type

Lubbock VIRGINIA	Release	2021 Yield	2-Yr Avg Yield	3-Yr-Avg Yield
ACI 442	ACI	3772	3912	4749
TxL090105-07	TAMU	2875	2557	4047
IPG 464	IPG	2805	2980	3947
TxL090105-15	TAMU	2509	2487	3722
Wynne	NC	2439	4411	-
ARSOK/NCEX17	OK/NC	2230	2217	-
Contender	OK	2091	2109	-
Means		2674	2953	4116

West Texas Virginia market type

Lubbock VALENCIA	Release	2021 Yield	2-Yr Avg Yield	3-Yr-Avg Yield
IPG 1288	IPG	4435	3585	4527
NMSU-5	NMS	3014	2579	2902
NMSU-4	NMS	3006	2500	2807
TxL054529-48	TAMU	2953	-	-
TamVal OL14	TAMU	2901	2095	2423
NMSU-6	NMS	2892	2117	3113
NMSU-3	NMS	2797	2461	-
Valencia 309		2657	-	-
Valencia 310		2587		
NMSU-7	NMS	2509	3176	-
NMSU-8	NMS	2352	2283	-
NMSU-2	NMS	1629	1790	2367
NMSU-1	NMS	1550	1559	2191
Means		2714	2415	2904

West Texas Valencia market type

Texas Peanut Program website

Diesel Nut project

TEXAS A&M AGRILIFE RESEARCH | EXTENSION

Chevron

Renewable feedstock with lower carbon intensity


DieselNut
Spanish
July 22, 2022, Wilbarger County

Diesel Nut project

- ↑ Oil content
- ↑ Drought tolerant
- ↑ Disease resistant
- BMPs
- Cropping systems

- Budget
- Market logistics

Renewable feedstock with lower carbon intensity

Obj. 2. Weed Control

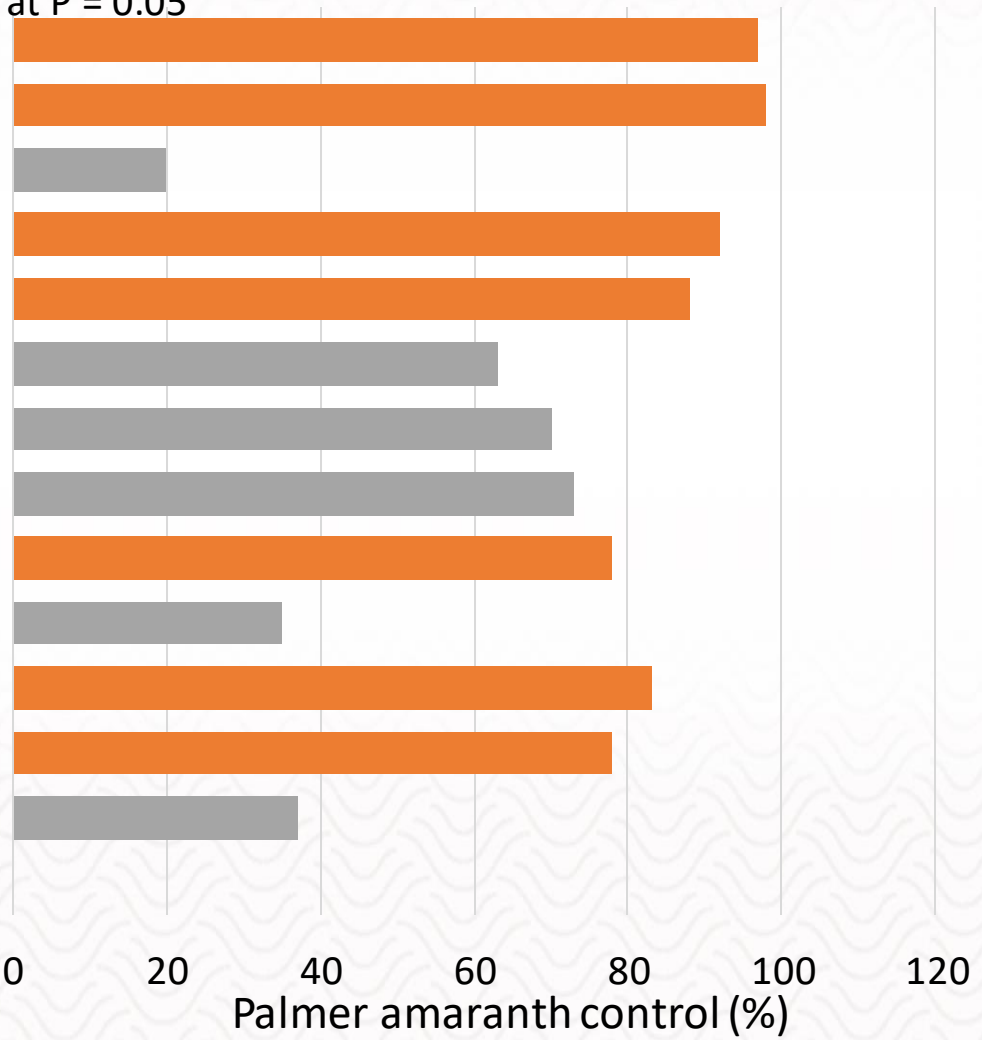
Pete Dotray, James Grichar, and Josh McGinty

- **Season-long control of Palmer amaranth**
- Peanut weed control using Anthem Flex
- Herbicide programs using Persuit
- Screening peanut cultivars for herbicide tolerance
- weed control with cadre when using various adjuvants
- will adjuvants improve the activity of soil-applied herbicides?
- peanut response to paraquat in the southwest growing region

Season-long Control of Palmer Amaranth (48 DA MPOS)

PRE	Crack	EPOS	MPOS
Prowl/DM/*/	*/*/	*/*/	DM/24DB/
Prowl/Valor/DM/	*/*/	*/*/	DM/24DB/
//*/	GM/Zidua/	*/*/	*/*/
Prowl/*/*/	*/*/	Cadre/24DB/	*/*/
Prowl/*/*/	*/*/	AF/24DB/	*/*/
Prowl/*/*/	GM/Zidua/	*/*/	*/*/
Prowl/Warrant/*/	*/*/	*/*/	*/*/
Prowl/Outlook/*/	*/*/	*/*/	*/*/
Prowl/AF/*/	*/*/	*/*/	*/*/
Prowl/Pursuit/*/	*/*/	*/*/	*/*/
Prowl/DM/*/	*/*/	*/*/	*/*/
Prowl/Valor/*/	*/*/	*/*/	*/*/
Prowl/*/*/	*/*/	*/*/	*/*/
//*/	*/*/	*/*/	*/*/

Orange bars are statistically same as the highest value at P = 0.05



DM: Dual Magnum, GM: Gramoxone, AF: Anthem Flex

Source: McGinty and Grichar

Troublesome weeds in Texas peanuts

Rolling Plains

- Palmer amaranth, nutsedge (purple and yellow)

West Texas

- Palmer amaranth, nutsedge, morning glory

Central Texas

- Palmer amaranth, purslane, Eclipta

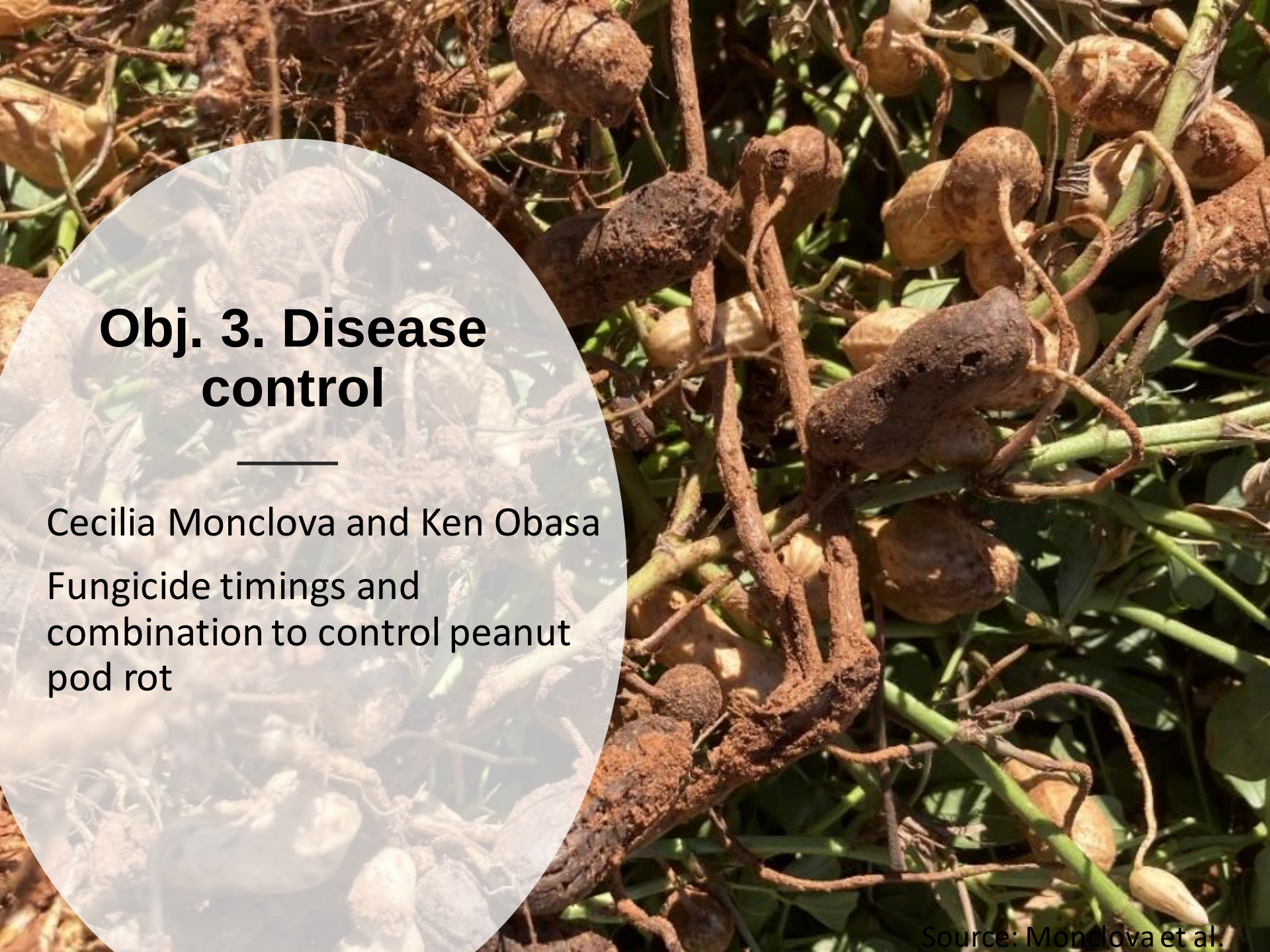
South Texas

- Smellmelon, Palmer amaranth, Texas panicum, crabgrass

Obj. 3. Disease control

Cecilia Monclova and Ken Obasa

Fungicide timings and combination to control peanut pod rot

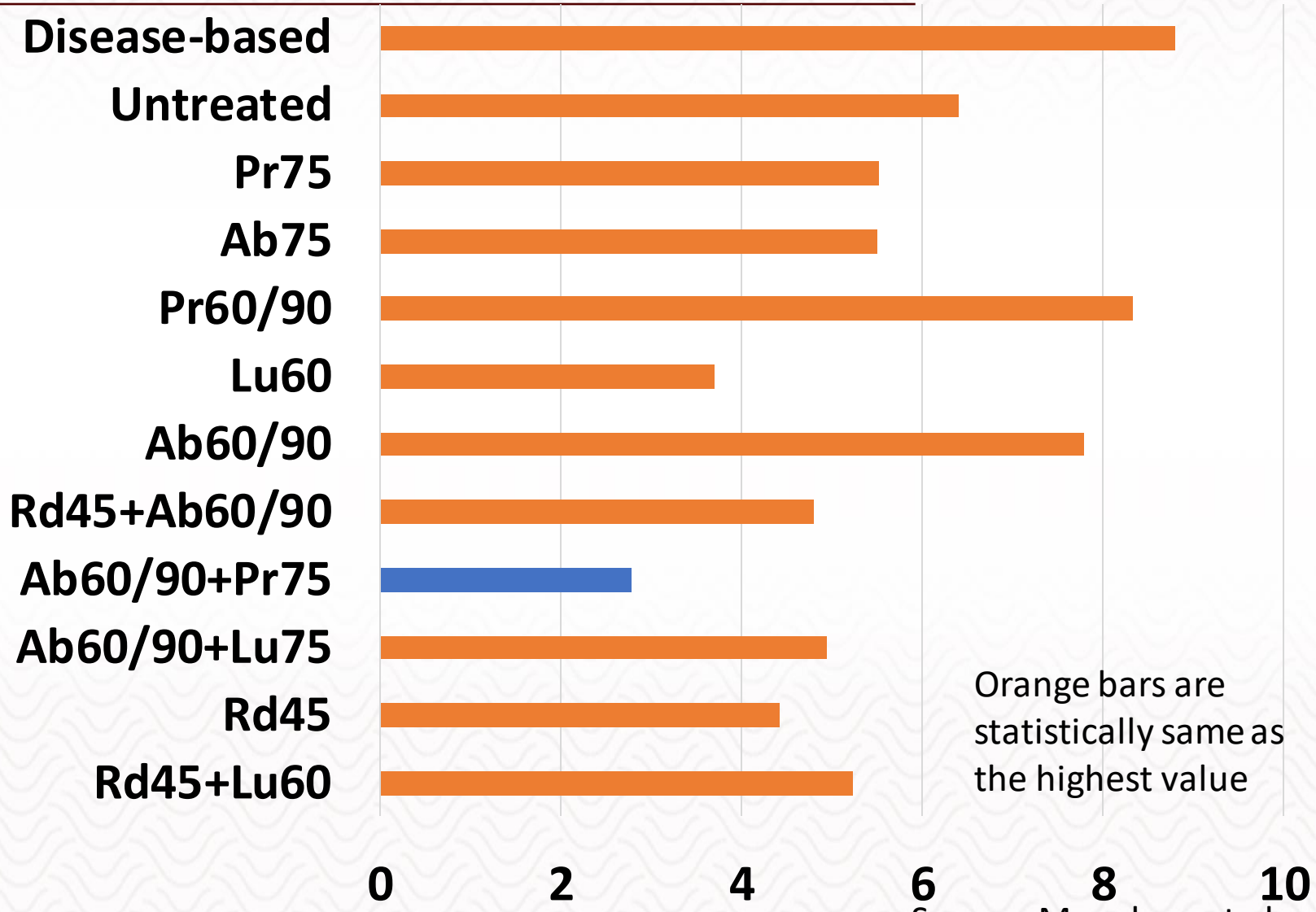


Source: Monclova et al.

Obj. 3. Disease control - Treatments

Trt	Chemical	Code	45 DAP	60 DAP	75 DAP	90 DAP
1	Ridomil	Rd45 +	X			
	Lucento	Lu60		X		
2	Ridomil	Rd45	X			
3	Abound	Ab60/90 +		X		X
	Lucento	Lu75			X	
4	Abound	Ab60/90 +		X		X
	Propulse	Pr75			X	
5	Ridomil	Rd45 +	X			
	Abound	Ab60/90		X		X
6	Abound	Ab60/90		X		X
7	Lucento	Lu60		X		
8	Propulse	Pr60/90		X		X
9	Abound	Ab75			X	
10	Propulse	Pr75			X	
11	Untreated	U	-	-	-	-
12	Disease-based spray	Dbs	-	-	-	-

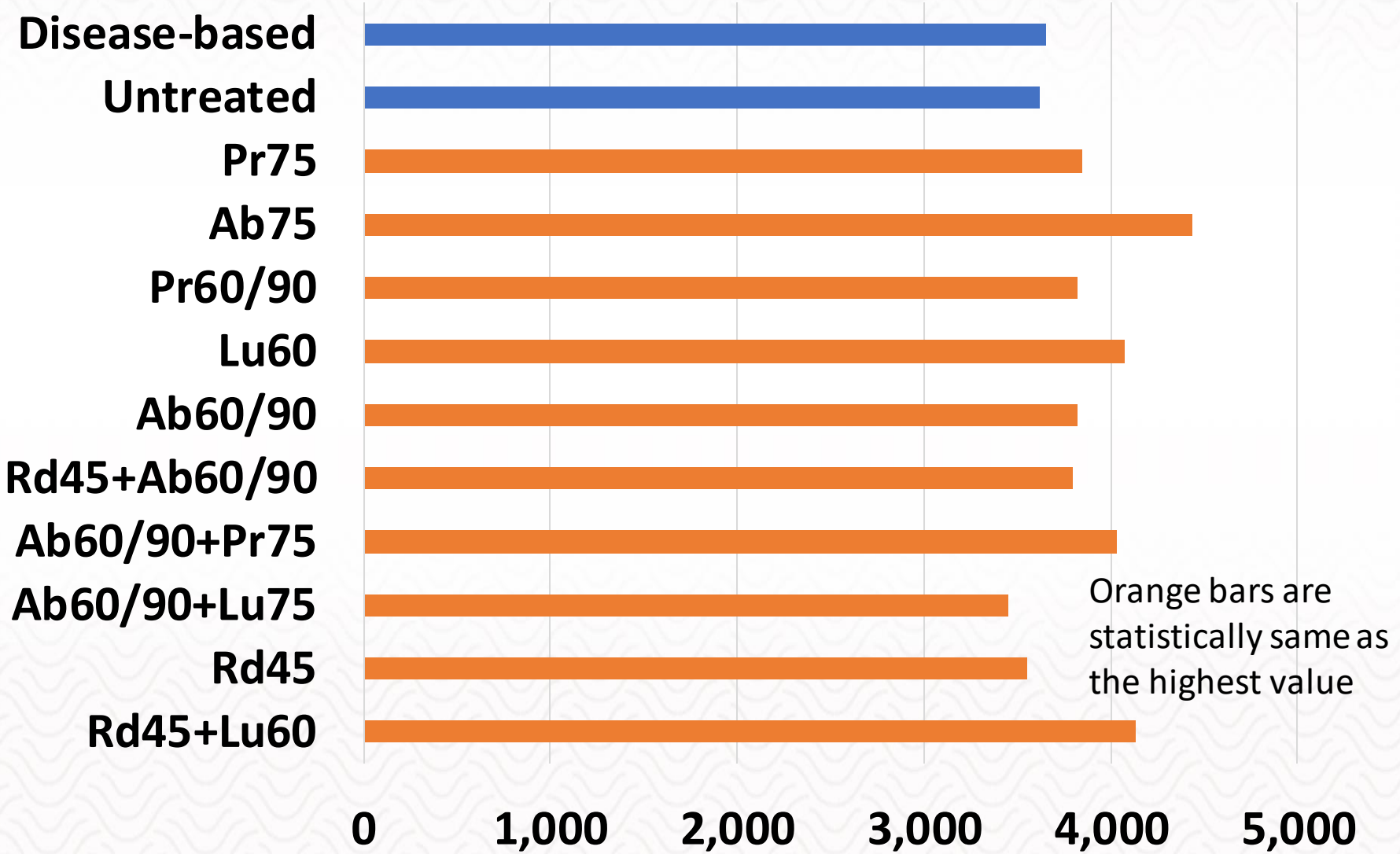
Incidence - %



Orange bars are statistically same as the highest value

Source: Monclova et al.

Yield – lb/ac



Source: Monclova et al.

Troublesome diseases in Texas peanuts

Rolling Plains

- Podrot and leafspot

West Texas

- Podrot

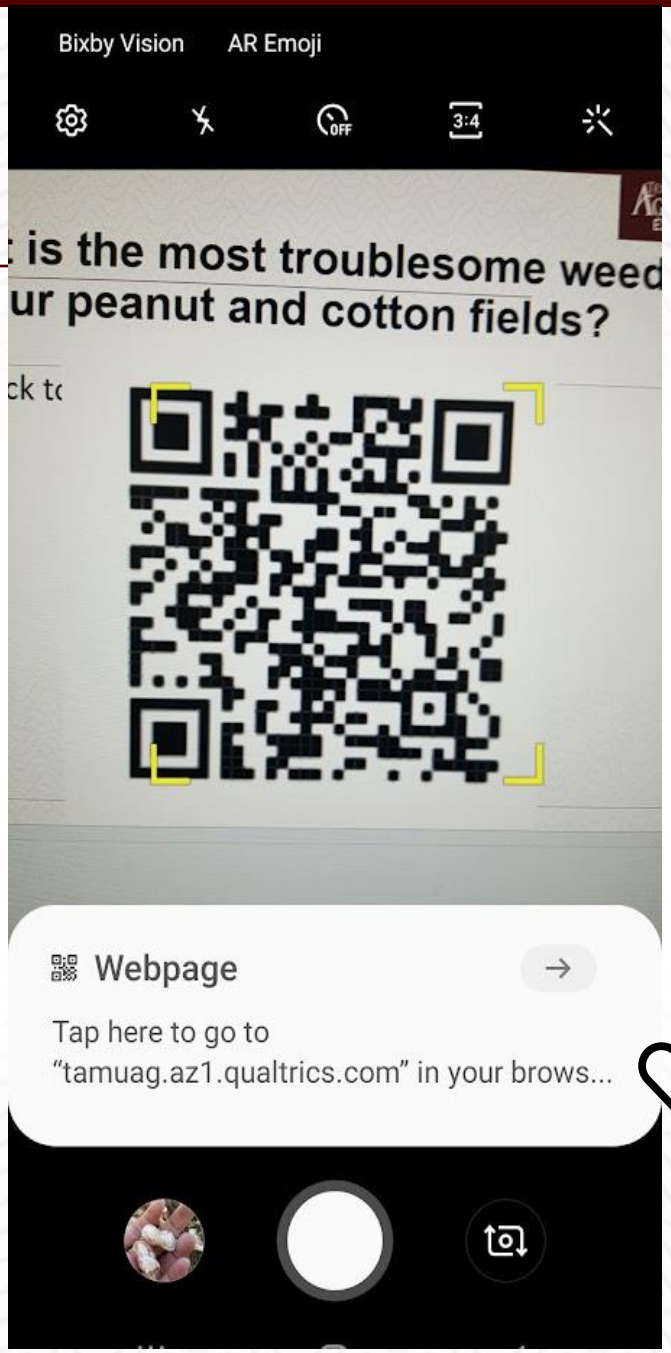
Central Texas

- *Phythium* pod rot, Southern blight, Nematode, *Rhizoctonia* limbrot

South Texas

- Leafspot, *Phythium* and *Rhizoctonia* pod rot, southern blight

What are the most troublesome weeds in your or your client's peanut fields?



Obj. 5. Soil health management & Organic production

Paul DeLaune and Katie Lewis

Leah Ellman-Stortz and Terry Gentry – Texas A&M University

Texas Peanut Producers

SARE Southern Sustainable Agriculture Research and Education

Organic Agriculture in Texas

- Texas ranks only 17th in the number of organic crop and livestock operations, 6th in total value of organic agricultural products sold and 9th in total organic acreage.

- **Texas grows over 90% of organic cotton, 95% of organic peanuts, and 41% of organic rice in the US.**

- Continuous organic cotton systems are common as a cover crop has been allowed to be considered as a rotation.

- Rye cover crops planted at low seeding rates (15 lb ac^{-1}) are commonly terminated via tillage in late winter during vegetative stage, 2-3 months prior to cotton planting, to conserve soil moisture.

Slide credit: DeLaune et al.

Cotton and Peanut Rotation

- Peanut is a common rotational crop with cotton under irrigated conditions.
- Peanut producers have expressed interest in soil health promoting practices (conservation tillage and cover crops).
- Digging peanuts

is a destructive process, potentially limiting the benefits of conservation tillage alone.

Organic Challenges and Cover Crops

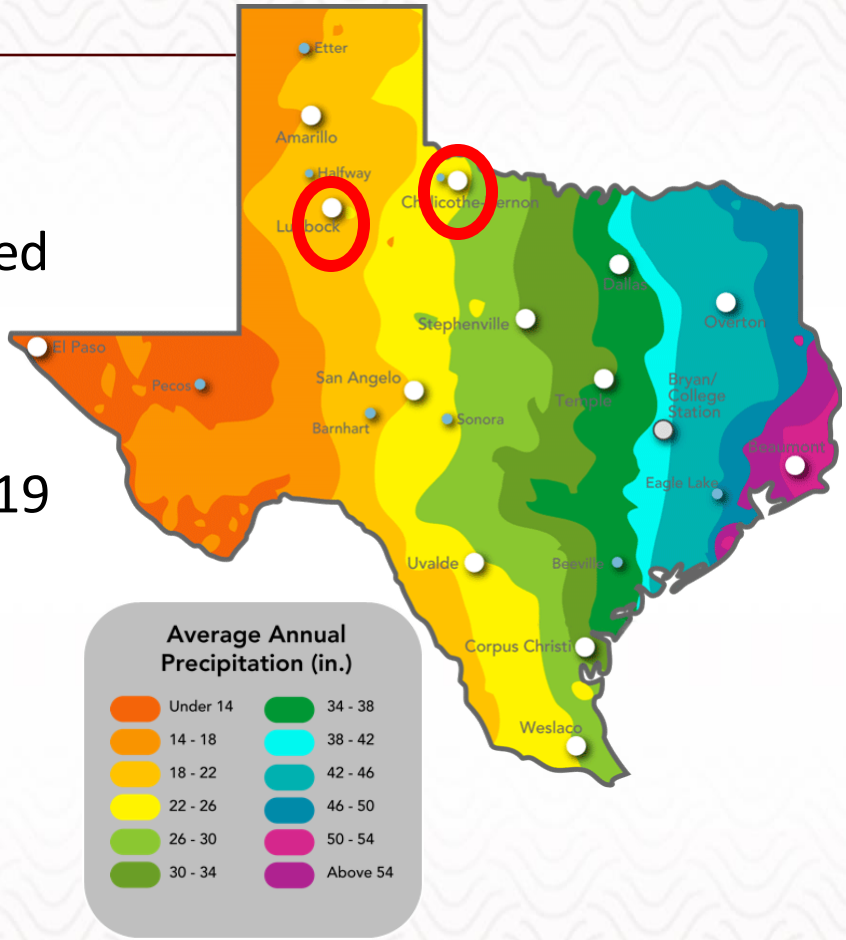
- **Weed control** and **nitrogen (N) management** are two main challenges.
- **Cover crops** offer a potential alternative or companion to mechanical tillage for weed control and can enhance soil fertility, soil organic matter, and soil structure.
- In semi-arid regions of Texas, the impact of cover crops on soil **moisture availability** is a major concern.
- Questions arise about species selection, seeding rate, and termination timing – which can subsequently affect weed control and nutrient cycling.

Objective

- The objective of this study was to identify management practices that enhance soil function in both conventional and organic agriculture and share successful practices between these systems.

Study Location

- Texas A&M AgriLife Research Extension Centers in Lubbock and Vernon
- Lubbock – Olton clay loam, furrow irrigated
- Vernon – Miles loamy fine sand, pivot irrigated
- Study initiated with cotton planting in 2019
- Initial cover crop planting in November 2019.
- Cover crops terminated April 2020
- Peanuts planted May 2020



2019 Cotton → Nov 19-Apr 20 CC → 2020 Peanut → Nov 20-Apr 21 CC → 2021 Cotton → Nov 21 CC

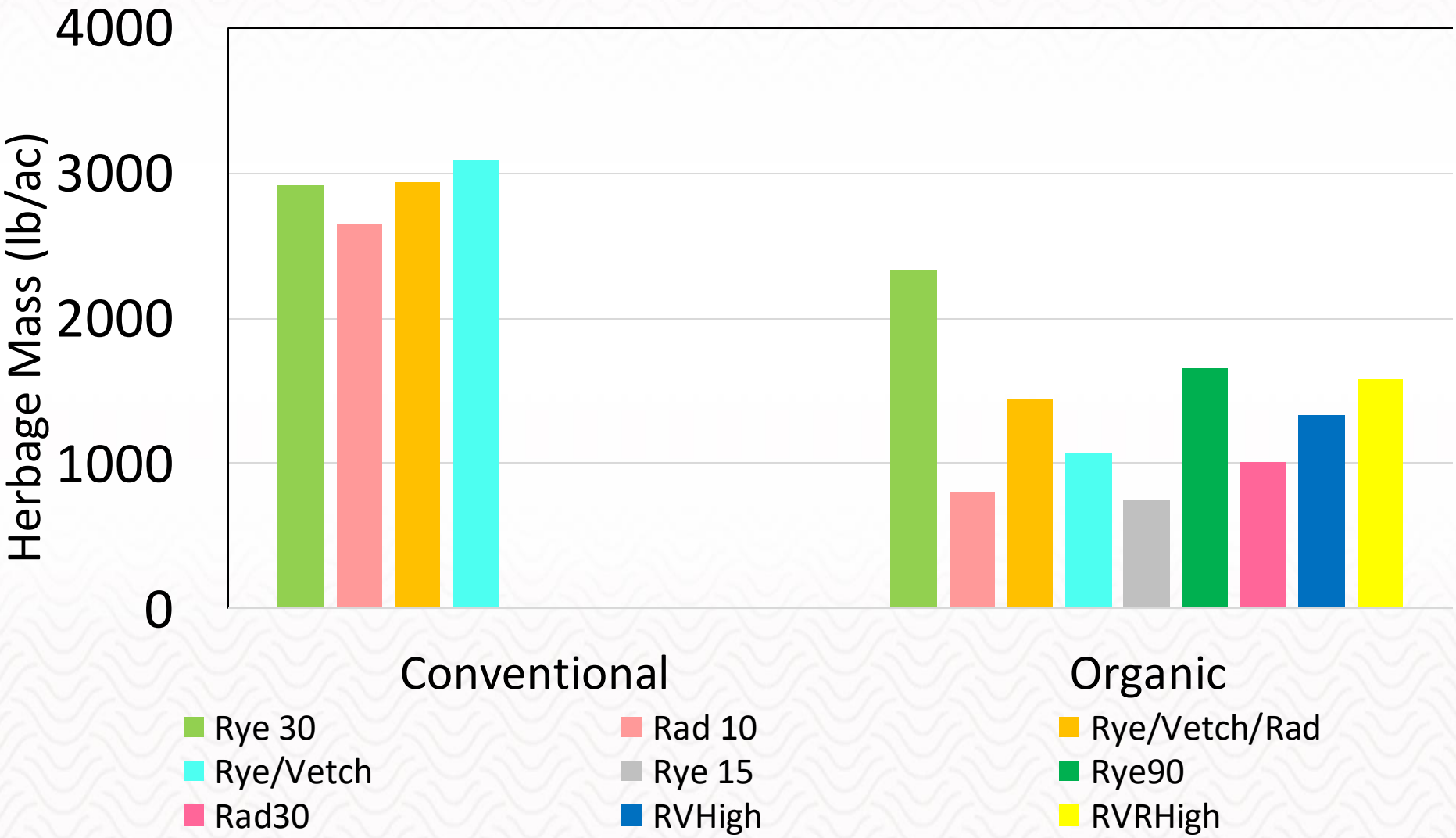
Treatments

Conventional	Organic
Control (no cover crop)	15 lb/ac rye (“control”)
30 lb/ac Rye	30 lb/ac Rye
10 lb/ac Radish	10 lb/ac Radish
25 lb/ac Rye + 5 lb/ac hairy vetch	25 lb/ac Rye + 5 lb/ac hairy vetch
25 lb/ac Rye + 3 lb/ac vetch + 2 lb/ac radish	25 lb/ac Rye + 3 lb/ac vetch + 2 lb/ac radish
	90 lb/ac Rye
	30 lb/ac Radish
	75 lb/ac Rye + 15 lb/ac vetch
	75 lb/ac Rye + 9 lb/ac vetch + 6 lb/ac radish

Split-plot, RCBD 4 replications

Cover crop termination

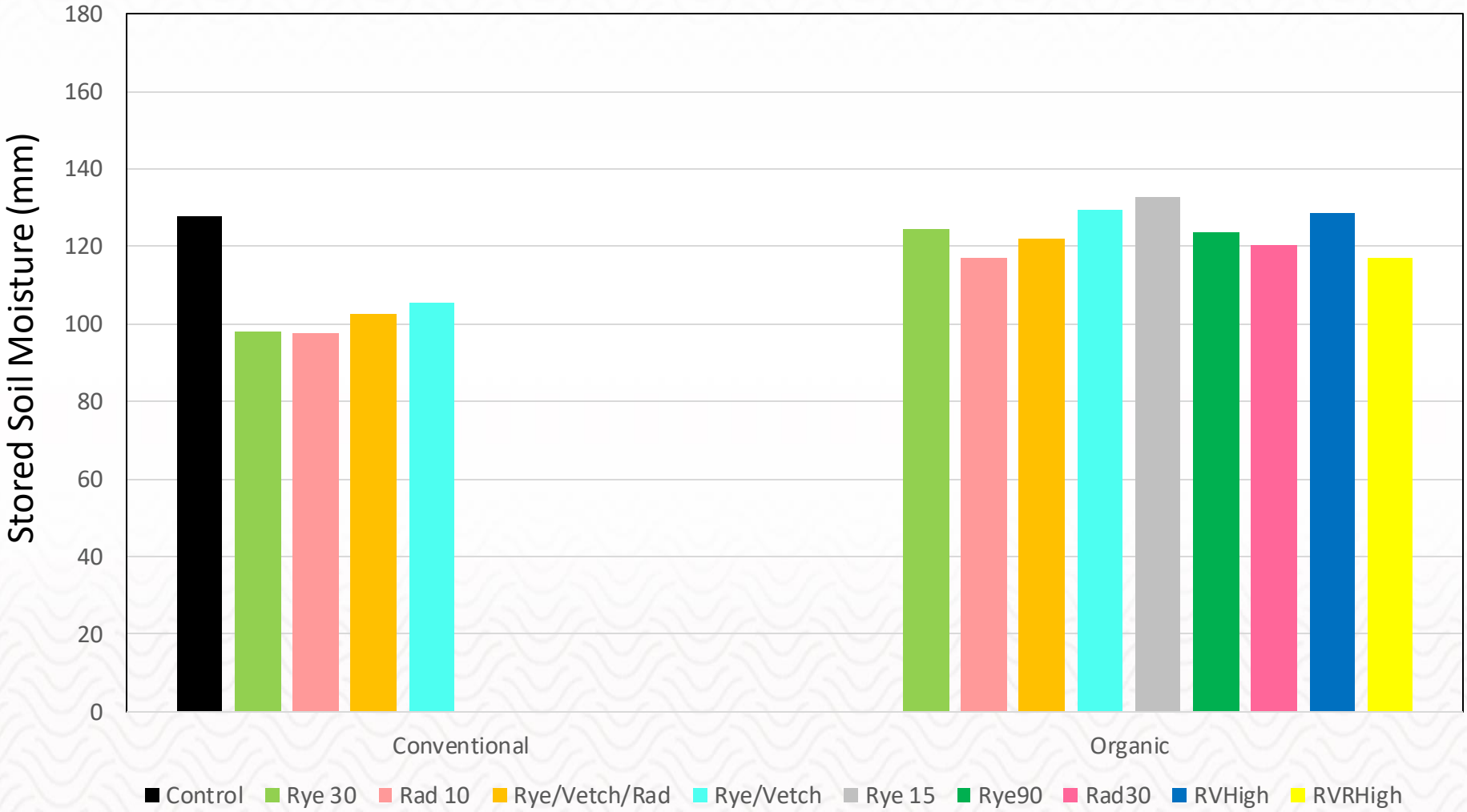
Cover Crop Herbage Mass



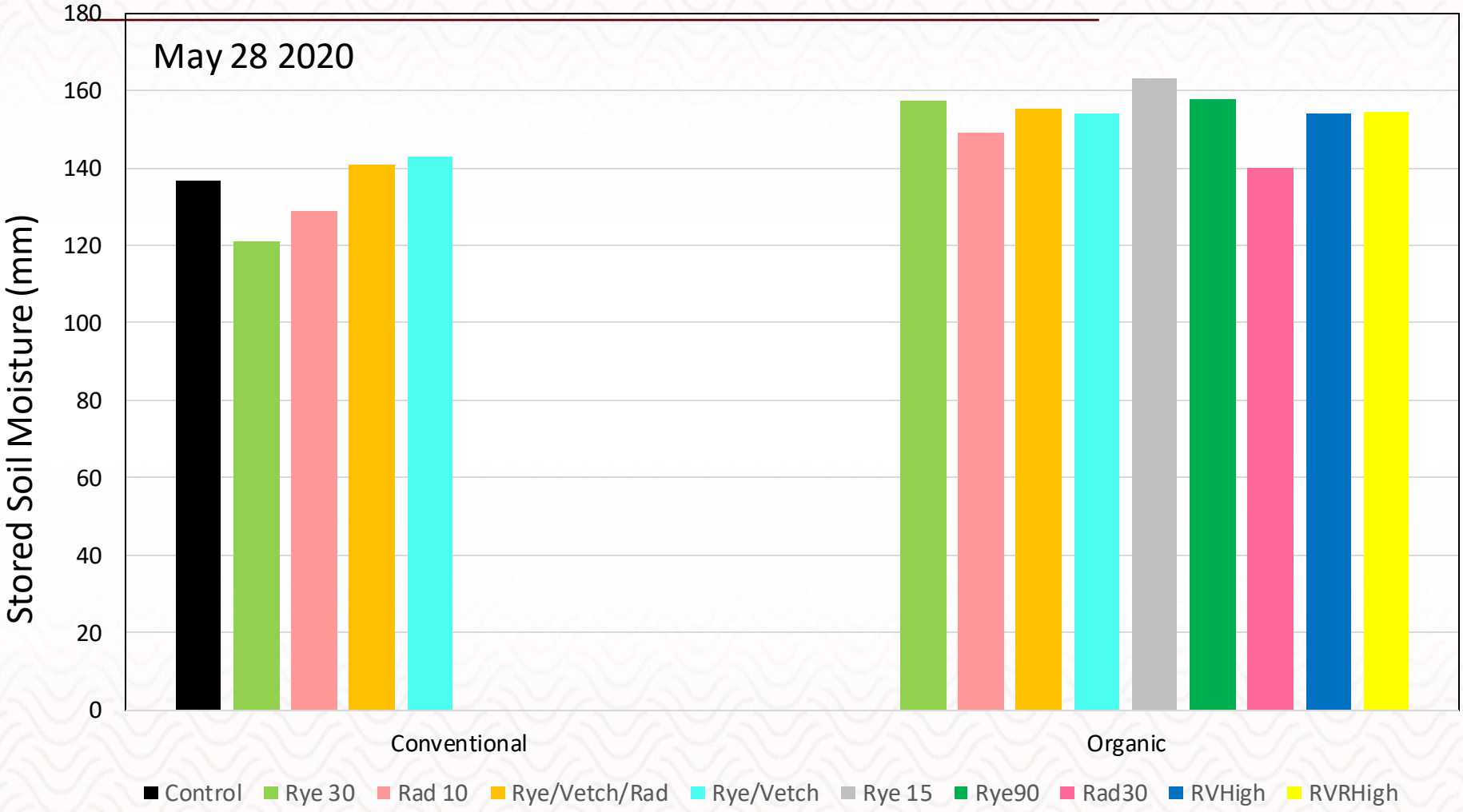

Rye Cover @ 30 lb/ac
No Cover

Soil Moisture 0-24 inches

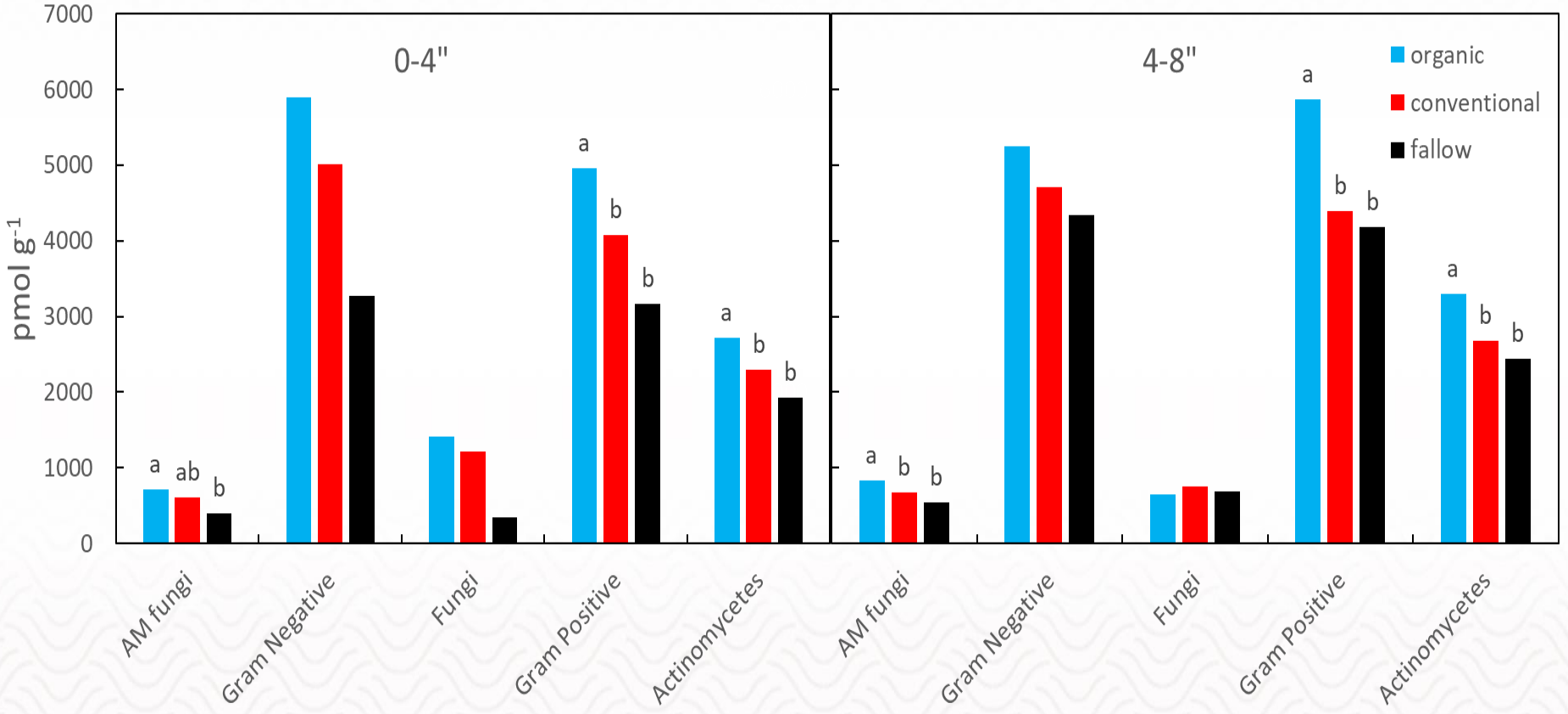
April 17 2020, cover crop termination



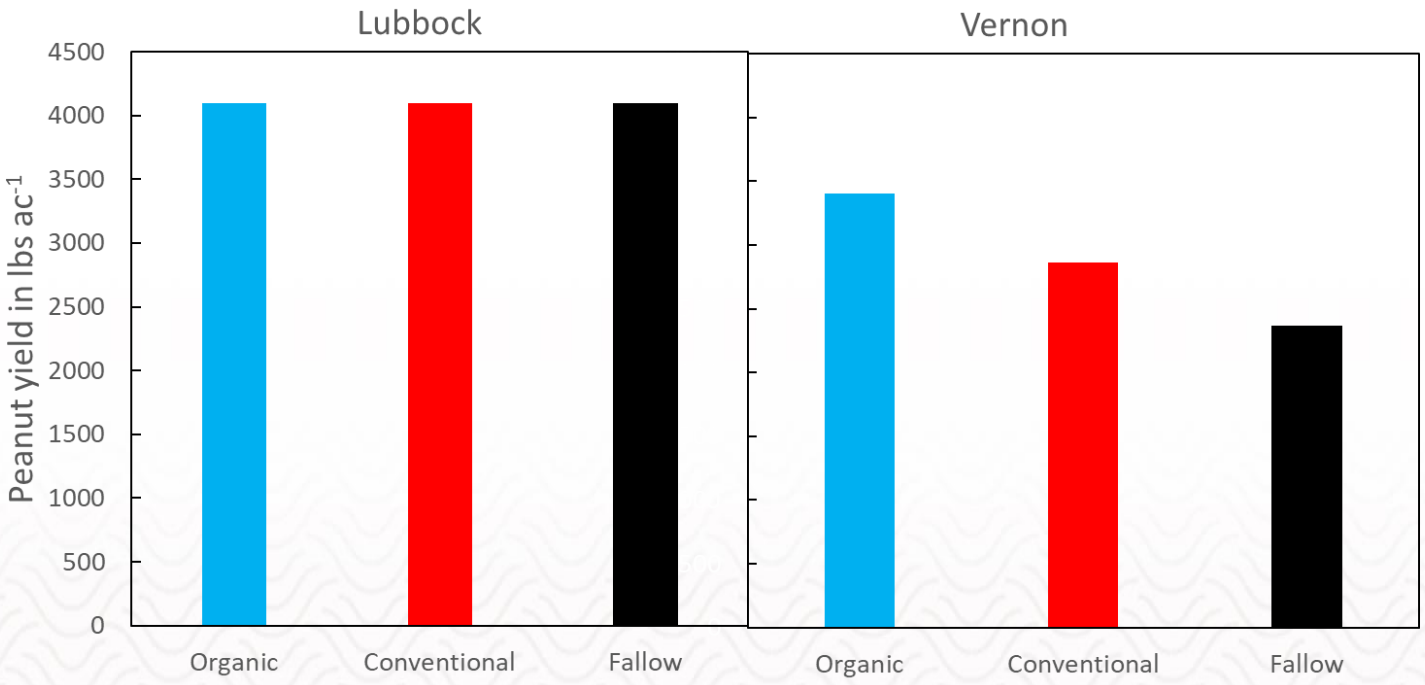
Soil Moisture 0-24 inches



Vernon: PLFAs



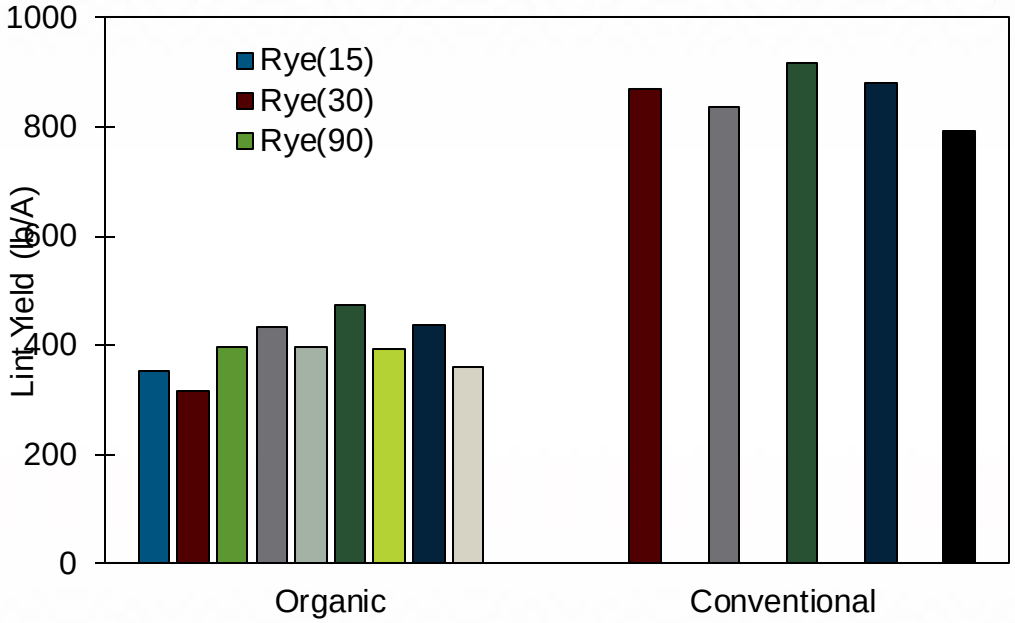
2020 Peanut yields



- No significant difference in yield according to management or cover crop selection.

Texas A&M AgriLife Research

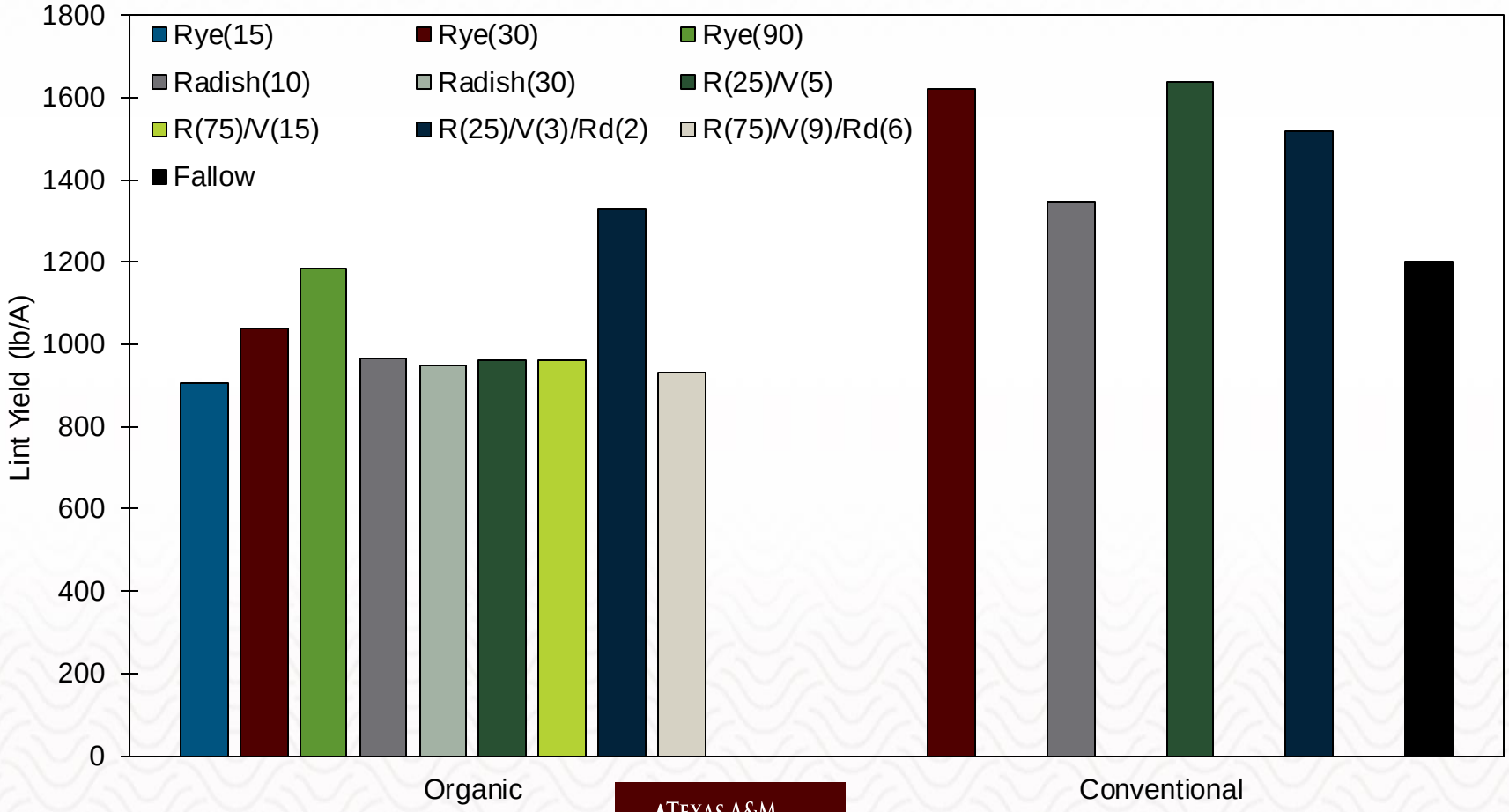
Cotton yield – Lubbock (2021)



Conventional
DP 2012 B3XF

Organic
UA48

Cotton yield – Vernon (2021)



TEXAS A&M AGRILIFE EXTENSION

Conclusions

Cover crop production was similar among treatments and seeding rates.

Under conventional management, stored soil moisture was lower for cover crop treatments but recovered by early season.

Stored soil moisture was similar among organic treatments, including varying seeding rates and termination timing.

PLFA indicated improved trends for microbial activity in organic system at Vernon, hypothesized due to recent compost application.

No yield loss due to organic or conservation management for peanuts. Organic cotton yield was reduced compared to conventional likely due to variety selection.

THANK YOU!

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